

AMENDMENTS TO THE CLAIMS

1-43. (Cancelled)

44. (Currently Amended) An apparatus, comprising:

a network interface;

a peripheral interface; and

a processor coupled to the network interface and the peripheral interface,

the processor configured to receive from the network interface a web page comprising embedded force feedback information,

the processor configured to generate a virtual environment based at least in part on the web page,

the processor configured to execute a force feedback driver software, the force feedback driver software configured to interpret the embedded force feedback information, and

the processor configured to send to the peripheral interface a force feedback signal configured to cause a force feedback effect, the force feedback signal based at least in part on the interpreted force feedback information.

45. (Previously Presented) The apparatus of claim 44, wherein:

the processor is configured to receive from the peripheral interface a position signal associated with a position of a manipulandum, the processor is configured to send to the network interface a signal associated with a first virtual object in the virtual environment based at least in part on the position of the manipulandum.

46. (Currently Amended) The apparatus of claim 44, wherein the force feedback signal sent to the peripheral interface is configured to compensate within the virtual environment ~~first simulation~~ for a delay.

47. (Previously Presented) The apparatus of claim 44, the processor being a first processor, wherein:

the virtual environment is defined by the first processor and a second processor in communication with the first processor over a network, the first processor implementing a first simulation of the virtual environment, the second processor implementing a second simulation of the virtual environment, the first simulation substantially corresponding to the second simulation.

48. (Previously Presented) The apparatus of claim 44, the processor being a first processor, the apparatus further comprising:

a manipulandum;

an actuator coupled to the manipulandum; and

a second processor coupled to the actuator and the peripheral interface, the second processor configured to receive the force feedback signal from the peripheral interface, the second processor configured to send a signal to the actuator based at least in part on the force feedback signal, the actuator configured to generate the force feedback effect based at least in part on the second signal.

49. (Previously Presented) The apparatus of claim 44, the processor being a first processor, the apparatus further comprising:

a manipulandum having at least one degree of freedom;

an actuator coupled to the manipulandum;

a sensor configured to detect a position of the manipulandum in the at least one degree of freedom; and

a second processor coupled to the sensor and the peripheral interface, the second processor configured to send a position signal to the peripheral interface based at least in part on the position of the manipulandum,

the first processor configured to send to the network interface a signal associated with a first virtual object based at least in part on the position signal.

50. (Previously Presented) The apparatus of claim 44, wherein:

the network interface, the peripheral interface and the processor are included within a video game console system configured to generate a virtual game environment; and

the network interface comprises an Ethernet connection or a modem connection.

51. (Previously Presented) The apparatus of claim 44, wherein the force feedback signal comprises a high-level command, the high-level command configured to be interpreted by a local processor to implement a local force routine with a manipulandum.

52. (Previously Presented) The apparatus of claim 44, wherein:

the force feedback signal comprises a positional offset, the positional offset being associated with a difference between a first virtual object and a second virtual object within the virtual environment generated by the processor.

53. (Previously Presented) An apparatus, comprising:

a manipulandum having at least one degree of freedom;

an actuator coupled to the manipulandum;

a sensor configured to detect a position of the manipulandum in the at least one degree of freedom, the position of the manipulandum being associated with a first virtual object within a virtual environment; and

a local processor coupled to the actuator and the sensor,

the local processor configured to receive from a host processor a force feedback signal generated by a force feedback driver software executing on the host processor, the force feedback signal based at least in part on a web page received from a remote processor,

the local processor configured to send an actuator signal to the actuator based at least in part on the force feedback signal from the host processor.

54. (Previously Presented) The apparatus of claim 53, wherein:

the local processor is configured to receive from the sensor a position signal associated with a position of a manipulandum, the position of the manipulandum being associated with a position of the first virtual object within the virtual environment.

55. (Previously Presented) The apparatus of claim 53, wherein:

the host processor is associated with a first simulation of the virtual environment;

the remote processor is associated with a second simulation of the virtual environment; and

the actuator signal is configured to compensate within the first simulation for a delay between the host processor and the remote processor.

56. (Previously Presented) The apparatus of claim 53, wherein:

the first processor implements a first simulation of the virtual environment, the second processor implements a second simulation of the virtual environment, the first simulation substantially corresponding to the second simulation.

57. (Previously Presented) The apparatus of claim 53, wherein:

the force feedback signal received from the host processor includes a high-level command, the local processor configured to implement a local force routine based on the high-level command, the actuator signal sent to the actuator being based at least in part on the local force routine.

58. (Previously Presented) The apparatus of claim 53, wherein:

the host processor is associated with a first simulation of the virtual environment;
the remote processor is associated with a second simulation of the virtual environment; and

the force feedback signal from the host processor includes a positional offset, the positional offset being associated with a difference between the first virtual object and the second virtual object within the first simulation.

59. (Previously Presented) A method, comprising:

providing a manipulandum having at least one degree of freedom;

providing an actuator coupled to the manipulandum;

providing a sensor configured to detect a position of the manipulandum in the at least one degree of freedom, the position of the manipulandum being associated with a first virtual object within a virtual environment; and

providing a local processor coupled to the actuator and the sensor, the local processor configured to receive from a host processor a force feedback signal generated by a force feedback driver software executing on the host processor, the force feedback signal based at least in part on a web page received from a remote processor, the local processor configured to send an actuator signal to the actuator based at least in part on the force feedback signal from the host processor.

60. (Currently Amended) The method of claim 59, wherein:

the local processor is configured to receive from the sensor a position signal associated with a position of a manipulandum, the position of the manipulandum being associated with a position of the a-first virtual object within the a-virtual environment executing on the host processor.

61. (Previously Presented) The method of claim 59, wherein:

the host processor is associated with a first simulation of the virtual environment;
the remote processor is associated with a second simulation of the virtual environment; and

the actuator signal sent to the actuator is configured to compensate within the first simulation for a delay.

62. (Previously Presented) The method of claim 59, wherein:

the first processor implements a first simulation of the virtual environment, the second processor implements a second simulation of the virtual environment, the first simulation substantially corresponding to the second simulation.

63. (Previously Presented) The method of claim 59, wherein:

the force feedback signal from the host processor includes a high-level command, the local processor configured to implement a local force routine based on the high-level command, the actuator signal sent to the actuator being based at least in part on the local force routine.

64. (Previously Presented) The method of claim 59, wherein:

the host processor is associated with a first simulation of the virtual environment;
the remote processor is associated with a second simulation of the virtual environment; and

the force feedback signal from the host processor includes a positional offset, the positional offset being associated with a difference between the first virtual object and a second virtual object within the first simulation.

- 65-68. (Cancelled)

69. (Currently Amended) A system, comprising:

a computer having
a network interface;

a peripheral interface; and
a host processor coupled to the network interface and the peripheral interface,

the host processor configured to generate a first simulation of a virtual environment including a first virtual object,

the host processor configured to receive from the network interface a web page comprising embedded force feedback information,

the host processor configured to execute a force feedback driver software, the force feedback driver software configured to interpret the embedded force feedback information, and

the host processor configured to send to the peripheral interface a force feedback signal configured to generate a force feedback effect, the force feedback signal based at least in part on the interpreted haptic feedback information; and

a controller having

a manipulandum having at least one degree of freedom;

an actuator coupled to the manipulandum;

a sensor configured to detect a position of the manipulandum in the at least one degree of freedom; and

a local processor coupled to the actuator, the sensor and the peripheral interface of the computer, the local processor configured to receive the force feedback signal, the local processor configured to send an actuator signal to the actuator based at least in part on the on the force feedback signal,

the actuator configured to generate a force feedback effect to the manipulandum based at least in part on the actuator signal.

70. (Previously Presented) A computer-readable medium comprising program code to cause a processor to perform the steps of:

receive a web page comprising embedded force feedback information from a network interface;

generate a virtual environment based at least in part on the web page;

execute a force feedback driver software, the force feedback driver software configured to interpret the embedded force feedback information, and

transmit a force feedback signal configured to cause an actuator to generate a haptic feedback effect, the peripheral signal based at least in part on the haptic feedback information.

71. (Previously Presented) The apparatus of claim 44, wherein the force feedback driver software comprises a browser plug-in or a dynamically linked library.

72. (Previously Presented) The apparatus of claim 44, wherein the web page is an HTML web page, and the embedded force feedback information is embedded in the HTML web page.

73. (Previously Presented) The apparatus of claim 44, wherein the embedded force feedback information is included in a separate file.